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## Characteristics of Negative and Positive Mental Health Among Nursing Students in the United States

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### Abstract

**BACKGROUND:** Researchers have documented significant psychological problems among nursing students, but findings have been inconclusive as to whether nursing students are “at-risk” for mental health problems compared with their non-nursing peers.

**AIMS:** This study examined whether nursing students have unique mental health characteristics compared with students from other professions.

**METHOD:** Undergraduates ( $N = 18,312$ ; nursing  $n = 1,399$ ) were selected from the 2016-2017 National Healthy Minds Study. Participants completed the Patient Health Questionnaire-9 (depression), the Generalized Anxiety Disorder-7 (anxiety), and the Flourishing Scale (positive psychology).

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#### Author Roles

Ryon C. McDermott conceived of the study, performed the analyses, and wrote the initial drafts of the entire manuscript. Sharon M. Fruh, Susan Williams, Caitlyn Hauff, Scott Sittig, Theresa Wright, Bettina Riley, Debra Swanzy, Rebecca J. Graves, and Heather Hall each contributed to the design of the study and critically revised or added components to the manuscript. All authors agree to be accountable for ensuring integrity and accuracy of this work.

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**RESULTS:** Nursing students were equally likely to screen positive for depression and anxiety compared with their non-nursing peers. However, when controlling for gender, age, and year in school, multigroup structural equation modeling analyses revealed that female (but not male) nursing students reported significantly higher levels of specific anxiety symptoms and certain psychological strengths than female students from other professions.

**DISCUSSION:** Nursing students are equally likely to screen positive for depression or anxiety as their non-nursing peers; however, anxiety disorders may reflect symptom profiles unique to nursing students.

**CONCLUSIONS:** Findings suggest a need for tailored screening and interventions to reduce mental health problems and harness psychological strengths unique to nursing students.

### Keywords

nursing students; depression; anxiety; positive psychology; college students

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## Differences in Negative and Positive Mental Health Between Nursing and Non-Nursing College Students

Symptoms of anxiety, stress, and/or depression are common sources of distress in college students in the United States (American College Health Association, 2017; Lipson, Zhou, Wagner, Beck, & Eisenberg, 2016). Likewise, researchers have noted high rates of depression among nursing students worldwide (Tung, Lo, Ho, & Tam, 2018). Researchers have also found that practicing nurses have higher rates of depression, compassion fatigue, and burnout; exhibit less-healthy lifestyle behaviors and work-life balance; and are at a higher risk for suicide than the general population (Priano, Hong, & Chen, 2017). Such mental health problems may negatively affect nurses' quality of work. Indeed, depression was identified as the strongest predictor of medical errors among nurses and physicians (Garrouste-Orgeas, Flaatten, & Moreno, 2016; Melnyk et al., 2018; Priano et al., 2017). Accordingly, identifying the rates and characteristics of nursing students' mental health concerns is important for informing programs aimed at helping nursing students develop happier and healthier lifestyles *before* they become practicing nurses. Therefore, the purpose of this study was to examine expressions of negative and positive mental health in a large sample of nursing students across the United States.

### Depression and Anxiety in Nursing Students

Major depressive disorder (MDD) and generalized anxiety disorder (GAD) symptomatology are the most common concerns reported by U.S. college students, according to institutional data from university and college counseling centers (Center for Collegiate Mental Health, 2018). However, estimates of possible depression or anxiety problems (i.e., positive screenings) vary in nursing students in the United States and worldwide. One of the largest published surveys of undergraduate nursing students across multiple institutions in the United States ( $N=2,111$ ) suggested that 16% reported symptomatology consistent with moderate MDD, and roughly 1 in 10 expressed symptoms consistent with moderate GAD (Lipson et al., 2016).

Depression and anxiety symptomology co-occur with variables that can negatively influence success in college (Bottomley, Abrutyn, Smigelsky, & Neimeyer, 2017). Depression has been robustly associated with academic and personal problems in college students across several different countries (Beiter et al., 2015; Haines, Norris, & Kashy, 1996; Hill, Yaroslavsky, & Pettit, 2015; Hysenbegasi, Hass, & Rowland, 2005; Zheng, Wang, Yu, Yao, & Xiao, 2014). For nursing students, in particular, depressive or anxiety symptomology has been associated with stress, feelings of rejection and inadequacy (Reeve, Shumaker, Yearwood, Crowell, & Riley, 2013), poor quality of sleep, and maladaptive coping (Zhang, Peters, & Chen, 2018).

### Positive Psychology

Compared with research examining mental health problems, such as depression or anxiety, fewer studies have addressed nursing students' *positive* mental health (i.e., positive psychology). Broadly defined, positive psychology suggests that mental health is simply the opposite of mental illness. Positive psychology encompasses subjective, personality, group, and institutional factors related to how individuals thrive in different conditions (Diener et al., 2010; Seligman & Csikszentmihalyi, 2014). Thus, a tendency to have positive experiences does not preclude the ability to have negative experiences (Barker, Galambos, Howard, & Wrosch, 2016), though college students who report greater well-being often evidence a variety of positive personal, academic, and relational characteristics (Barker et al., 2016; Diener et al., 2010; Ouweneel, Le Blanc, & Schaufeli, 2011; Peter, Roberts, & Dengate, 2011).

Expressions of positive mental health have also been robustly associated with academic success in both cross-sectional and longitudinal studies in the United States among the general student body (e.g., Gallagher, Marques, & Lopez, 2016). Researchers have suggested that greater self-reported personal or relational well-being among nursing students is associated with a variety of positive variables in samples from different countries. For example, such positive psychology variables have been associated with healthy exercise habits among British students (Hawker, 2012), more satisfaction with life in Turkish students (Yildirim, Kilic, & Akyol, 2013), and even a greater likelihood of completing nursing education at an accelerated rate among Australian students (Pitt, Powis, Levett-Jones, & Hunter, 2014). Such findings suggest that understanding the characteristics of nursing students' expressions of positive mental health may be particularly relevant to promoting well-being throughout nursing education.

### The Present Study

Given the potential for negative academic and professional consequences of anxiety and depression, as well as the potential benefits of positive psychology, it is important to understand the positive *and* negative characteristics of mental health in nursing students. One logical starting point is to ask the question: "Do nursing students have unique mental health characteristics compared with students from other professions?" The answer could help inform nursing education by identifying whether nursing students require targeted or tailored mental health interventions.

Some researchers have argued that nursing students may be especially prone to poor mental health due to the stress of nursing school (Bartlett, Taylor, & Nelson, 2016; Cleary, Horsfall, Baines, & Happell, 2012; Timmins, Corroon, Byrne, & Mooney, 2011). Despite evidence that nursing students report higher levels of stress compared with the general student body (Bartlett et al., 2016), several studies have reported no differences in the prevalence rates (i.e., positive screenings) of depression or anxiety between students in nursing and in other career trajectories (Lipson et al., 2016; Tung et al., 2018). However, investigators have only examined differences in the probability of screening positive for global measures of MDD or GAD, as opposed to exploring differences in *specific* MDD or GAD symptomology. It is possible that, although there may be no difference in the likelihood of screening positive overall, nursing students may exhibit different *symptom profiles* for these disorders than their non-nursing peers. In other words, nursing students may “spike” (i.e., score relatively higher) on specific MDD or GAD symptoms compared with the general student body, a possibility previously unexplored in the literature. Understanding potential differences in MDD and GAD symptom profiles between nursing and non-nursing college students, therefore, could help inform and support novel, tailored mental health promotion strategies for nursing schools.

Accordingly, the present study examined mental health differences between nursing students and students from a wide array of health and non-health-related training programs in the United States. Moreover, to provide a more complete assessment of psychological well-being, the researchers examined expressions of positive *and* negative mental health. Given the exploratory nature of the present study, no hypotheses were advanced.

## Method

### Participants and Procedures

Data were gathered through the National Healthy Minds Study (HMS), which constitutes a random sample of college students from nearly 100 U.S. colleges and universities. Students were invited to complete an anonymous online survey, and then data is available by request the next year. A total of 18,312 undergraduate students were selected from the 2016-2017 HMS data, which was used by permission from the HMS organizers after institutional review board approval for archival data analysis (see Table 1 for sample demographics). Of note, a series of univariate analyses revealed that most demographic characteristics were similarly represented between nursing and non-nursing students, with two exceptions. The first was for gender (male or female), with women overrepresented among nursing students. Second, nursing students were slightly older than their non-nursing peers.

### Measures

**Expressions of Negative Mental Health.**—Depression symptoms were measured using the Patient Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001), a 9-item screening instrument. Participants are asked to specify the frequency with which they have experienced symptoms of depression (e.g., “feeling down, depressed, or hopeless”) over the past 2 weeks using a 0 (*not at all*) to 3 (*nearly every day*) scale. The items are summed, and a higher score is indicative of MDD symptoms. Internal consistency

coefficient alpha for PHQ-9 items was acceptable in the present study for women ( $\alpha = .89$ ) and for men ( $\alpha = .89$ ).

The Generalized Anxiety Disorder-7 (GAD-7) was used to evaluate anxiety symptoms (Spitzer, Kroenke, Williams, & Löwe, 2006). Participants reported the frequency with which they have experienced symptoms of anxiety (e.g., “becoming easily annoyed or irritable”) over the past 2 weeks using a 0 (*not at all*) to 3 (*nearly every day*) scale (Spitzer et al., 2006). The items are summed, and a higher score is indicative of GAD symptoms. Internal consistency coefficient alpha for GAD-7 items were acceptable in the present study for women ( $\alpha = .92$ ) and for men ( $\alpha = .91$ ).

**Expressions of Positive Mental Health.**—Psychological well-being was measured with the Flourishing Scale (Diener et al., 2010), an 8-item measure of self-perceived success focusing on areas such as relationships, self-esteem, purpose, and optimism. The flourishing scale was the only measure of positive psychology presented in the 2016-2017 HMS. Participants were asked to indicate their agreement with each of the eight items (e.g., “I am optimistic about my future”) using a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. Higher scores are indicative of having many psychological resources and strengths. Internal consistency coefficient alpha for Flourishing Scale items were acceptable in the present study for women ( $\alpha = .92$ ) and for men ( $\alpha = .92$ ).

### Analysis Plan

Analyses consisted of two steps: chi-square tests to determine if the percentage of nursing students who screened positive for MDD or GAD differed from their non-nursing peers, and multigroup structural equation modeling (SEM) to identify symptom profiles that may be unique to nursing students. Specifically, differences in anxiety, depression, and flourishing between college students from nursing and other professions/majors were examined using measurement invariance/equivalence (MIE) procedures (Kline, 2016; Vandenberg, 2002; Vandenberg & Lance, 2000). MIE testing determines if differences exist in the meaning and level of a construct between different groups (Kline, 2016) at the item level (i.e., symptom-level in the present study) after removing the confounding effects of measurement error. To address additional confounding variables, such as gender (i.e., nursing is a female dominated profession, and women are more likely to express symptoms of anxiety and depression than men) and year in school, MIE testing was performed separately for male and female students, and age and number of years in school were included as covariates.

Following best practices for MIE testing, we examined a series of hierarchical models with different levels of cross-group equality constraints testing configural, metric, and scalar levels of invariance (see Table 2 for a detailed overview of the measurement invariance procedures and definitions used in the present study). For all invariance models, we used established indices of model fit and recommended cutoffs (see Table 2). All analyses used Mplus Version 7.31 (Muthén & Muthén, 1998-2017), full information maximum likelihood estimation to handle missing data, and robust standard errors to address nonnormality.

## Results

### Preliminary Analyses

Data were first screened for missing values, univariate and multivariate outliers, and assumptions of normality. Of the 19,907 participants, missing values and outliers were minimal (less than 2% of total). However, some variables evidenced moderate deviations from normality.

### Primary Analyses

**Chi-Square.**—Given the extremely large sample size and the documented bias of chi-square analyses within in large samples (Kline, 2016), a cross-tabs analysis with an adjusted alpha of .001 (to reduce Type 1 error) was conducted. There were no noteworthy differences in the rates of positive screening ratings between female nursing (29.2% for MDD and 29.1% for GAD) and non-nursing female students (34.2% for MDD and 30.1% for GAD). MDD and GAD positive screening rates were also not significantly different between male nursing students (21.7% for MDD and 19.9% for GAD) and male non-nursing peers (25.7% for MDD and 18.3% for GAD).

**Differences in Symptom Profiles.**—Table 3 displays model fit and invariance testing results for female and male students. Multigroup SEM generally supported the presence of configural and metric invariance, suggesting that the same latent factors of positive and negative mental health were extracted for both nursing and non-nursing students. In contrast, a scalar invariance model was a significantly worse fit than the metric model for women only, and bootstrap analyses revealed that several item intercepts were significantly greater for female nursing students compared with female students from the general college population. Moreover, because metric invariance was supported, any differences in the item-level intercepts (i.e., means for each symptom) were not due to underlying differences in the meaning of each overall construct (Kline, 2016).

After controlling for age and number of years in school, female (but not male) nursing students evidenced significant differences on specific expressions of flourishing by reporting higher levels of having a meaningful life, contributing to others' happiness, and being optimistic. Female nursing students did not evidence differences in depression symptoms compared with their female non-nursing peers. However, they scored significantly higher than their non-nursing peers on the majority of the seven anxiety symptoms assessed, including (a) feeling anxious or on edge, (b) being unable to stop worrying, (c) trouble relaxing, and (d) feeling easily annoyed or irritable. Table 4 provides the intercept values and standard errors for female nursing students compared with female non-nursing students. Because there were no significant differences in the item intercepts for men (i.e., scalar invariance was supported), those results are not displayed here but are available on request from the first author.

## Discussion

This study sought to identify the characteristics of nursing students' positive (i.e., flourishing) and negative (i.e., depression [MDD] and anxiety [GAD]) mental health using a



large sample of college students in the United States. Although the percentage of positive screens for MDD or GAD were not significantly different based on whether respondents identified as nursing students or students from the general student body, multigroup SEM revealed significant differences in the overall symptom profile of GAD (but not MDD) among female nursing students compared with their female non-nursing peers. Moreover, these differences were not due to an underlying discrepancy in the meaning of GAD among college students in the present sample (i.e., metric invariance was supported). However, female nursing students' responses signaled that they may have a higher base-rate of certain anxiety symptoms, as evidenced by their significantly different/greater item intercepts (i.e., item-level means). This pattern of results suggests a differential-additive response style (Kline, 2016), such that female nursing students seem to be expressing anxiety differently at the symptom level compared with their peers.

A differential-additive response style often signifies the presence of cultural or external (to the assessment) factors that influence participants' responses (Kline, 2016). The present study examined men and women separately to reduce the confounding effects of gender as well as controlled for age and year in school. Moreover, the nursing and non-nursing student samples were generally similar with respect to their demographic characteristics. Thus, the differential-additive response pattern in this study may suggest the unique influence of the culture of nursing education on female (but not male) nursing students' GAD symptom profiles. Considering that female nursing students in the present sample "spiked" on the worrying and emotional aspects of anxiety compared with the general student body, the present findings may also highlight the unique, stressful experiences of nursing school (Labrague, McEnroe-Petite, Al Amri, Fronda, & Obeidat, 2018). That is, nursing students scored higher than their non-nursing peers on items measuring problems such as feeling anxious or on edge, difficulty relaxing, and feeling irritable. Additionally, considering that the present differences were only statistically significant for women, future researchers should consider how gender and nursing school culture intersect to impact mental health.

In addition to identifying potential symptom profile differences on GAD, the present findings revealed some potential psychological strengths that appeared to be unique to female nursing students in our sample. Consistent with the altruistic nature of nursing as a profession, such findings indicate that nursing students' positive well-being may be uniquely characterized by their engagement with a helping profession, feeling they contribute to others' happiness, and general optimism for the future. Indeed, qualitative studies of why individuals pursue nursing as a profession have yielded prominent themes of wanting to care for others and feelings of empathy and altruism (Eley, Eley, Bertello, & Rogers-Clark, 2012). Additional research is thus needed to determine how these psychological strengths, potentially revolving around a nurse identity, may buffer against the potential negative and stressful experiences inherent during nursing education.

### **Limitations and Implications**

The present findings should be interpreted with respect to some key limitations. First, the sample was primarily White overall, and the number of male nursing students was comparatively small, although generally consistent with the gender characteristics of the

profession. The small number of men may be a reason significant differences were identified only for women in the present study. Second, the use of self-report measures may produce socially desirable response bias or other factors that may have otherwise skewed these results. Relatedly, because the multigroup SEM analyses in the present study examined the measurement of mental health variables with respect to specific instruments, it is possible that further differences (or no differences) may emerge when examining other measures of positive or negative mental health, though each of the instruments used has undergone extensive psychometric analyses to ensure they are appropriate and valid for a variety of cultures and groups. Relatedly, given our results related to nursing students' flourishing, future researchers are also encouraged to examine other indicators of positive psychology. For example, the Positive Psychology Center at Pennsylvania State University (2019) provides a detailed list of validated positive psychology measures to consider for inclusion in future investigations of nursing student well-being.

Despite these limitations, the present findings suggest a need to address U.S. nursing students' mental health. Future research could focus on assessing or enhancing elements of mental health promotion within the culture of nursing education. The American Psychiatric Nurses Association includes mental health promotion as one of their core nursing content areas for educators based on information from the *Psychiatric-Mental Health Nursing: Scope and Standards of Practice* (American Psychiatric Nurses Association, International Society of Psychiatric Mental Health Nurses, American Nurses Association, 2014). However, in addition to ensuring nursing students are competent in health promotion, it is equally important to ensure that nursing programs model mental health promotion so that these future caregivers learn how to care for themselves.

Mental health promotion in nursing school could take many forms, ranging from primary to tertiary prevention. From a primary prevention perspective, educators are encouraged to emphasize the importance of self-care and help nurses flourish. Specifically, nursing students could incorporate positive mental health strategies that enhance flourishing such as harnessing their trait levels of hope (Feldman & Dreher, 2012) or developing gratitude lists (Davis et al., 2016). These effective techniques promote psychological well-being by creating feedback loops of positive emotions and experiences (Fredrickson, 2001), and thus they may help nursing students develop a foundation of adaptive mental health for the future. Moreover, each of these interventions are highly customizable. Because nurses in the present sample appeared to thrive in areas related to nurse identity, the aforementioned interventions could easily incorporate professional values and identity variables. For example, nursing students could be encouraged to connect with their passions for becoming nurses (e.g., a desire to help others) and to identify why they are grateful for those passions or for the opportunity to pursue them professionally.

From a secondary and tertiary prevention perspective, regular MDD and GAD screenings should be considered to help identify and target problems in this population. Based on such information from routine screening measures, educators could help at-risk students seek the help they need. Nursing programs could also provide students with easily accessible, evidence-based interventions, such as mindfulness (for a review, see O'Driscoll, Byrne, Mc Gillicuddy, Lambert, & Sahn, 2017), relaxation training, and Cognitive Behavioral therapy



techniques (for a review, see Yusuf, Nicoloro-SantaBarbara, Grey, Moyer, & Lobel, 2019). These self-care tools could help nursing students manage the unique and extreme demands of nursing school, especially for those students already struggling with mental health problems.

## Conclusion

Our results suggest that nursing students express anxiety and flourishing differently at the symptom/item level compared with non-nursing peer groups. It is important for nurse educators to recognize the unique needs of nursing students to best determine where, when, and how to intervene to promote optimal mental health in nursing students during their education. Additionally, some nursing students might be able to counter stressful components of their rigorous academic schedule by building on and using more elements of positive psychology, particularly flourishing, as that was identified as one of their unique strengths. In summary, it is imperative to establish positive mental health interventions that will facilitate the growth of a happier, healthier nursing student population and future nurses.

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**Table 1.** Demographic Characteristics: Male and Female Nursing and Non-Nursing Student Subsamples.

	Nursing students		Non-nursing students	
	Male	Female	Male	Female
Sexual orientation				
Heterosexual	84.6%	92.1%	87.6%	82.2%
Lesbian	0%	1.2%	0%	1.8%
Gay	9.3%	0.0%	6%	0.2%
Bisexual	3.7%	4.7%	3.8%	10.1%
Self-identified	6%	0.9%	1.4%	3.1%
Questioning	1.9%	1.0%	1.2%	2.6%
Age				
Mean	25.58	23.5	21.87	21.52
Standard deviation	8.91	5.14	5.10	5.14
Race/Ethnicity				
African American/Black	6.1%	8.5%	6%	7.1%
American Indian/native	4.3%	2.2%	1.8%	2.1%
Asian American/Asian	12.9%	10.1%	13.4%	12.7%
Hispanic/Latino(a)	10.4%	5.7%	7%	8%
Native Hawaiian or Islander	0.6%	1.2%	1%	0.9%
Middle Eastern	1.8%	1.2%	1.9%	1.5%
White non-Hispanic	71.2%	77.7%	76.6%	76.7%
Self-identified	1.8%	1.1%	2.3%	1.7%
Current finances				
Always stressful	12.4%	14.1%	8.5%	14.1%
Often stressful	28%	25.4%	21.4%	25.4%
Sometimes stressful	37.3%	35.7%	36.8%	35.7%
Rarely stressful	16.8%	18.5%	24%	18.5%
Never stressful	5.6%	6.4%	9.4%	6.4%

Note. Nursing Students (N= 1,399), male-identified (n = 1,241), Non-Nursing Students (N = 16,913), male-identified (n = 5,550), female-identified (n = 11,363), Non-nursing fields were the following: humanities, natural sciences, social sciences, business, education, engineering, art, and undecided.

**Table 2.**

**Hierarchy of Measurement Invariance Levels: Definitions and Model Fit Criteria.**

Level of invariance	Statistical definition	Conceptual definition	Evidence needed for support
Level 1: Configural	The same model provides acceptable fit when all parameters are freely estimated across each group.	The model as a whole is similar across both groups. This is a critical step to be able to test the next level of invariance.	Acceptable model fit for the entire model when allowing all parameters (factor loadings and intercepts) to be freely estimated across each group.
Level 2: Metric	The observed-item factor loadings for each latent variable are not statistically different across each group.	The same latent variable was extracted for each group. Thus, each measure appears to be capturing the same latent construct in each group. This is an important step to rule out any measurement bias in the meaning of the construct that can obscure accurate estimates of group differences.	A non-significant chi-square difference between the configural and the metric model and/or the presence of zero in each 99% bias-corrected confidence interval of the difference in factor loadings across each group.
Level 3: Scalar	The item intercepts for each latent variable are statistically equivalent across groups.	The zero points of each latent variable are similar across groups. This means that groups do not differ on their average responses to each item in each measure. In the present study, this is where differences in symptom profiles are examined.	A nonsignificant chi-square difference between the metric and the scalar model and/or the presence of zero in each 99% bias-corrected confidence interval of the difference in item intercepts across each group.
Criteria for model fit for all levels and models			
Chi-square	Comparative fit index, Tucker Lewis index	Root mean square error of approximation and 90% confidence interval (CI)	Standardized root mean square residual
Nonsignificance = perfect fit. This is extremely rare in large sample sizes.	Close to or exceeding .95 = good fit; .90 or higher = acceptable fit.	Less than .05 (low CI) and not exceeding .10 (high CI) = good fit.	Less than .08 = good fit.

*Note.* Configural invariance must be supported before testing metric invariance, and metric invariance must be supported before testing scalar invariance.

**Table 3.** Invariance Model Fit Statistics and Conclusions for Female and Male Nursing Students Compared With Non-Nursing Students.

Gender	$\chi^2$	df	CFI	TLI	RMSEA	90% CI RMSEA	SRMR	$\chi^2$	df	Bootstrap results	Conclusion	
Configural invariance												
Female	12430.2***	582	.918	.908	.057	(.056, .058)	.045	—	—	—	Invariance supported	
Male	5352.75***	582	.923	.914	.054	(.053, .056)	.043	—	—	—	Invariance supported	
Metric invariance												
Female	12456.82***	603	.918	.911	.056	(.055, .057)	.046	72	***	21	All factor loadings were statistically similar despite the significant chi-square difference	Metric invariance supported
Male	5329.23***	603	.923	.918	.053	(.052, .054)	.043	9.77	ns	21	All factor loadings were statistically similar, supporting the nonsignificant chi-square difference	Metric invariance supported
Scalar invariance												
Female	12663.92***	627	.916	.914	.055	(.054, .056)	.047	134.64	***	24	Nursing students' intercepts were significantly different than non-nursing students' intercepts	scalar Invariance failed
Male	5389.04***	627	.923	.912	.052	(.051, .054)	.043	32.15	ns	264	Nursing students' intercepts were not significantly different than non-nursing students' intercepts	Scalar invariance supported

Note.  $\chi^2$  = scaled chi-square; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; CI = confidence interval; SRMR = standardized root mean square residual; — = change.

\*\*\*  $p < .001$ , ns = nonsignificant.



Intercepts and Their Standard Errors for Flourishing (FS), Depression (PHQ-9), and Anxiety (GAD-7) Across Female Nursing and Non-Nursing College Students.

**Table 4.**

Item	Content (abbreviated)	Nursing, Intercept (SE)	Non-nursing, Intercept (SE)
<b>FS1</b>	<b>Having a meaningful life</b>	<b>5.65 (.13)</b>	<b>5.25 (.05)</b>
FS2	Having a supportive social network	5.59 (.12)	5.34 (.04)
FS3	Engaged in daily activities	5.26 (.14)	4.94 (.05)
<b>FS4</b>	<b>Contribute to others' happiness</b>	<b>5.78 (.10)</b>	<b>5.47 (.04)</b>
FS5	Feeling competent and capable	5.82 (.11)	5.54 (.04)
FS6	Feeling like a good person	5.81 (.12)	5.28 (.05)
<b>FS7</b>	<b>Being optimistic</b>	<b>5.76 (.13)</b>	<b>5.26 (.05)</b>
FS8	Feeling respected	5.56 (.12)	5.31 (.04)
PHQ1	Anhedonia	2.04 (.06)	2.03 (.03)
PHQ2	Feeling down and depressed	2.17 (.07)	2.07 (.30)
PHQ3	Sleep problems (less sleep)	2.51 (.07)	2.37 (.03)
PHQ4	Feeling tired or less energy	2.87 (.07)	2.66 (.03)
PHQ5	Poor appetite or over eating	2.34 (.07)	2.12 (.03)
PHQ6	Feeling bad about oneself	2.16 (.07)	2.07 (.03)
PHQ7	Trouble concentrating	2.11 (.07)	2.04 (.03)
PHQ8	Moving slowly	1.55 (.05)	1.44 (.02)
PHQ9	Suicidal ideation	1.30 (.04)	1.36 (.02)
<b>GAD1</b>	<b>Feeling nervous/anxious or on edge</b>	<b>2.75 (.08)</b>	<b>2.41 (.04)</b>
<b>GAD2</b>	<b>Unable to stop worrying</b>	<b>2.47 (.09)</b>	<b>2.26 (.04)</b>
GAD3	Worrying about many things	2.73 (.08)	2.48 (.04)
<b>GAD4</b>	<b>Trouble relaxing</b>	<b>2.55 (.06)</b>	<b>2.23 (.03)</b>
GAD5	Being restless (fidgeting)	2.18 (.06)	1.71 (.03)
<b>GAD6</b>	<b>Easily annoyed and irritable</b>	<b>2.58 (.07)</b>	<b>2.21 (.03)</b>
GAD7	Feeling afraid	2.15 (.07)	1.81 (.03)

Note. FS = Flourishing Scale items; PHQ = Patient Health Questionnaire-9 (depression items); GAD = Generalized Anxiety Disorder-7 items; CI = confidence interval. Intercept values in bold were significantly different, as evidenced by a 99% CI that did not contain zero. A 99% CI was used to minimize Type I error due to multiple comparisons. Item stems have been summarized to conserve space.